CCS Technical Documentation
NHL-2NA Series Transceivers

Service Tools

Issue 2, Amendment 1 08/03
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JBV-1 Docking Station and MJF-7 Adapter

The JBV-1 Docking Station has been designed for calibration and software update use. The MJF-7 Docking Station Adapter makes signal connections to the phone. JBV-1 and MJF-7 are used as one unit.

JBV-1 main electric functions are:
- adjustable VBATT calibration voltage, current measurement limit voltage "VCHAR", current measurement calibration current "ICHAR"
- adjustable ADC calibration voltage via BTEMP and BSI signal
- BTEMP and BSI calibration resistor
- signals from FBUS to the phone via parallel jig
- control via FBUS or USB
- Flash OK/FAIL indication

In calibration mode JBV-1 is powered by external power supply 11-16V DC. In flashing power for the phone can be taken from FPS-8 or external power supply 11-16V DC.

MJF-7 main electric functions are:

- phone recognizing from BTEMP
- filters of FBUS signals
- Proximity sensor calibration plate
- White light source for camera testing
- Possibility to use TDS-11 ambient light sensor calibration lamp
- Possiblity to use TDS-10 for RF tuning or CPL-5 for RF measurement

Product Code

JBV-1 Docking Station:	0770298
MJF-7 Docking Station Adapter:	0775285

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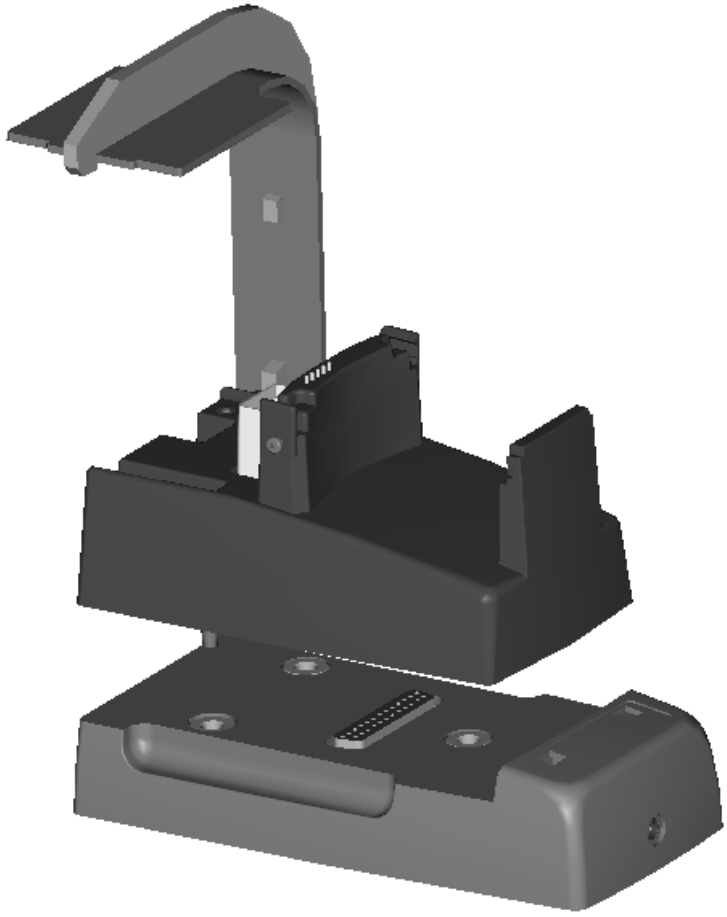
View of MJF-7 with JBV-1

Figure 1: MJF-7 and JBV-1



Spare parts for MJF-7

MJF-7 has a white light source integrated to the structure for Camera Testing. Light source has limited lifetime and it starts to lose brightness as it is used. It is recommended that the light source be changed every 1000 hours of use.

Spare part code: JBS-28 Uniform Light source module 0770335

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CPL-5 RF coupler

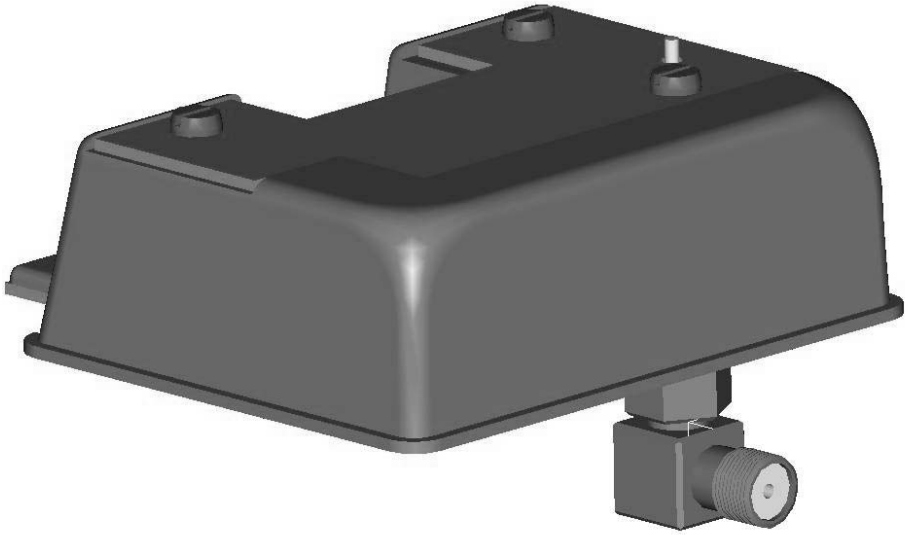
The CPL-5 RF coupler has been designed to be used with MJF-7 and JBV-1. CPL-5 allows service technician to measure performance of NHL-2GSM RF. RF tuning with CPL-5 is not allowed.

Product Code

CPL-5 RF coupler: 0770370

View of CPL-5

Figure 2: CPL-5



RF-Coupler CPL-5: measured losses

Attenuation values are printed on the service accessory

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TDS-10 GSM RF probe for RF tuning

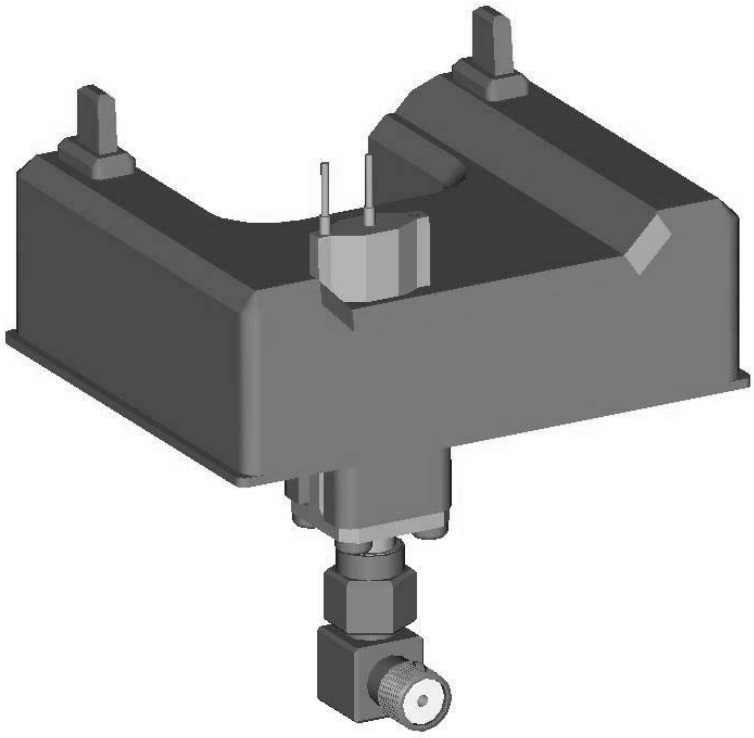
GSM RF probe has been developed for repair places where easy access for RF tuning s is essential. Only Sim cover of the phone has to be removed and then phone is ready for RF tuning. This probe has to be used together with MJF-7 and JBV-1.

Product Code

TDS-10 GSM RF probe for RF tuning 0770436

View of TDS-10

Figure 3: TDS-10



Spare pins for TDS-10

The pins which make RF connection to phone are quite sensitive for mechanical stress. Spare pins are available with the following codes.

Ground pin, TDS-10 Accessory	0770437
Insulated antenna pin, TDS-10 Accessory	0770438

Insulated pin can be hard to insert without experience. The following tool is available to help in this operation:

SRT-8 Insertion tool	0770497

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TDS-11 Calibration lamp

Ambient light sensor of NHL-2 tranceiver needs to be calibrated after certain service operations. TDS-11 must be used together with JBV-1 and MJF-7.

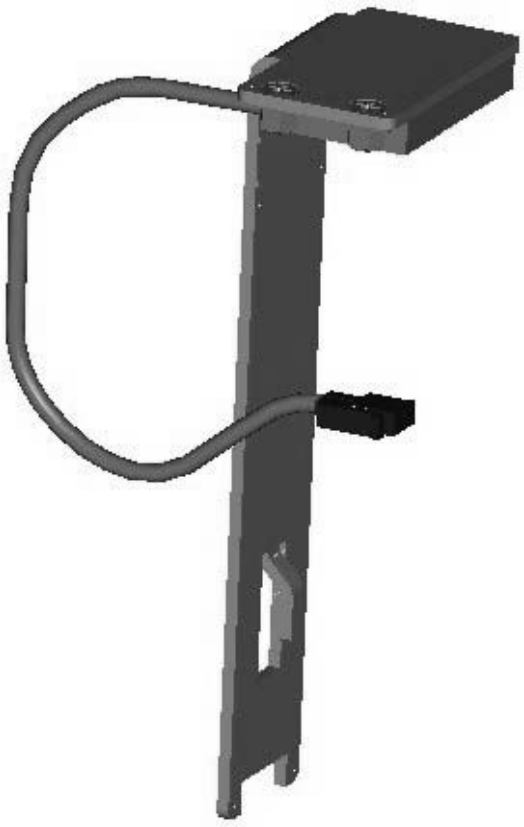
Note! TDS-10 is made out of metal and it is not recommended to keep it installed when making coupler measurement or RF tunings with TDS-11. Remove TDS-10 always from MJF-7 when not using it. TDS-10 brightness also weakens in lond term use. Ambient light sensor calibration system (JBV-1+MJF-7+TDS-11) must be calibrated time to time with golden phones (Selected phones from production line) in regular intervals.

Product Code

TDS-11 Calibration lamp	0770440

View of TDS-11

Figure 4: TDS-11



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RA7 RF adapter

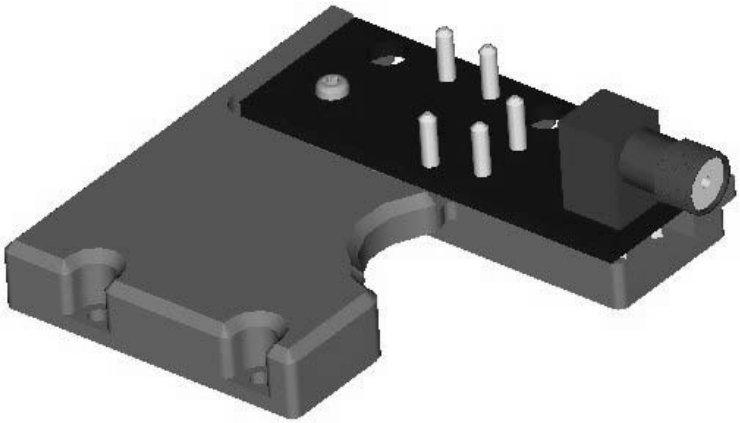
RA7 RF adater is low cost option for NHL-2 RF tuning. RA7 can be used together with FLA-21 or MJF-7/JBV-1 combination. Four screws has to be opened in NHL-2 Transceiver and Acoustic chamber has to be removed in order to be able to use RA7 RF adapter.

Product Code

RA7 RF adapter	0770443

View of RA7 Adapter

Figure 5: RA7



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MJS-9Q Module Jig

The MJS-9Q Module Jig is used for testing of the following modules:

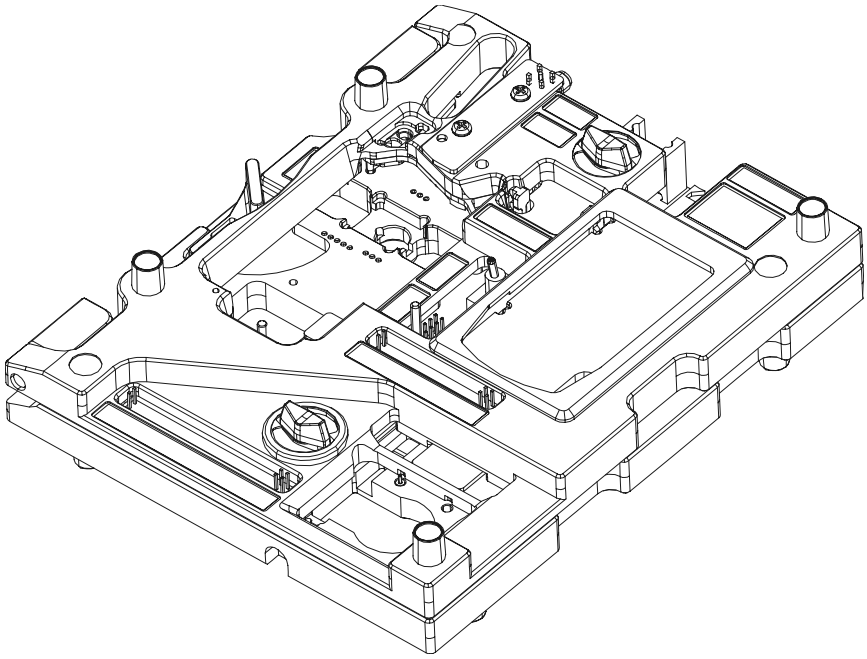
- User Interface
- Baseband on LG4 module
- RF on LG4 module
- Grip module

Product Code

MJS-9Q Module Jig: 0775284

View of MJS-9Q

Figure 6: MJS-9Q



Note: The nominal supply voltage for MJS-9Q is +6.0 V. The supply voltage must not exceed +9.0 V (min 5V).

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MJS-79 Soldering Jig

The Soldering Jig MJS-79 is used for soldering and as a rework jig for system module.

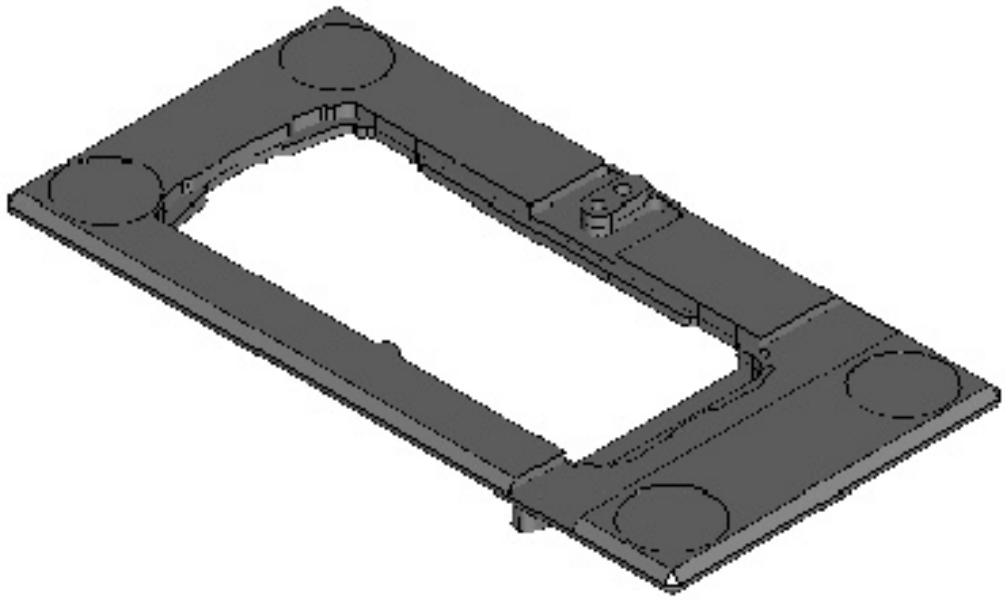
Product Code

MJS-79 Module Jig: 0770439

View of MJS-79

Picture will be added here later.

Figure 7:



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LRK-1 Rework Kit

The LRK-1 Rework Kit is used for PA Chip (LGA type component) rework and includes Rework Jig MJS-54, SES-1 Stencil and SPS-1 Soldering Paste Spreader.

The sales pack includes:

MJS-54 Rework Jig:	0770349
SES-1 Stencil:	0770348
SPS-1 Soldering Paste Spreader:	0770381

Note: Not included in sales package.

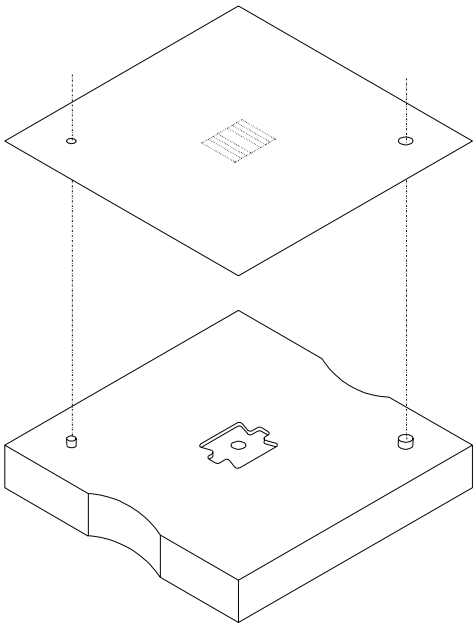
SPI- 1 Soldering Paste Injector	0770380

Sales package code

LRK-1 Rework Kit:	0080465

View of MJS-54 and SES-1

Figure 8: MJS-54 and SES-1



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LS4 to LG4 Flex change soldering head

Special soldering head is required to change flex which is soldered to LG4 main PWB. Soldering head does not have type designation or NMP code, it has to be ordered directly from Metcal.

Sales package code

Sales package code: No NMP Code, Metcal order code is SMTC-163.

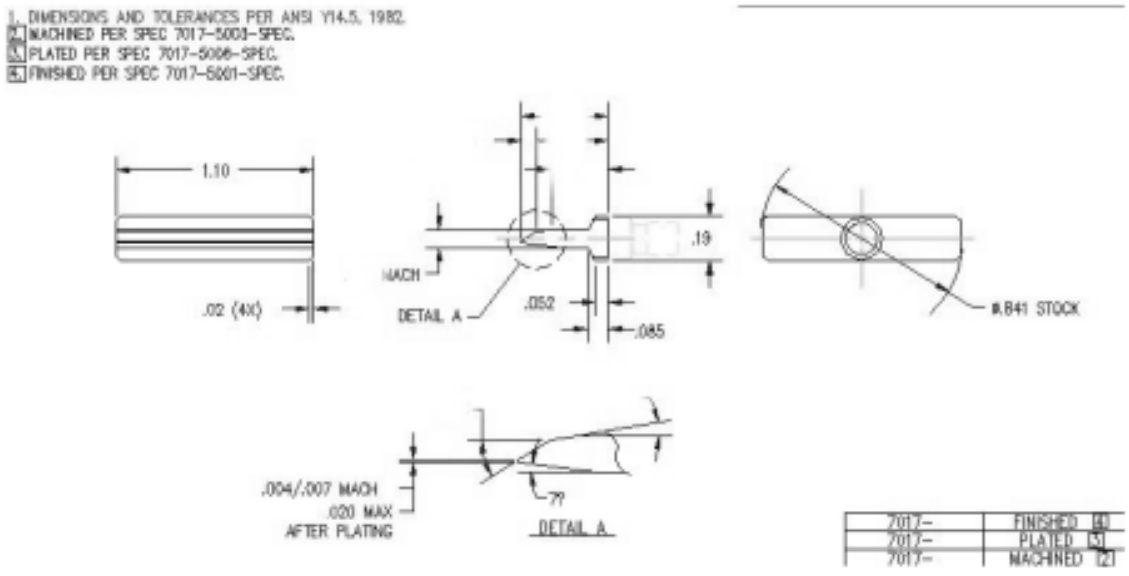
The tip can be ordered from Metcal distributors in all European countries, in South Africa, Australia and in the following Asian countries:

- India
- China
- Korea
- Japan
- Taiwan
- Singapore
- Malaysia
- India

See contact information in: http://www.metcal.com/distributors/

View of Soldering Tip

Figure 9: Soldering Tip



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FPS-8 Flash Prommer (Sales Pack)

The Flash Prommer FPS-8 is used with e.g. FLA-21 and JBV-1. Power is supplied to FPS-8 from the Universal Power Supply.

The sales pack includes:

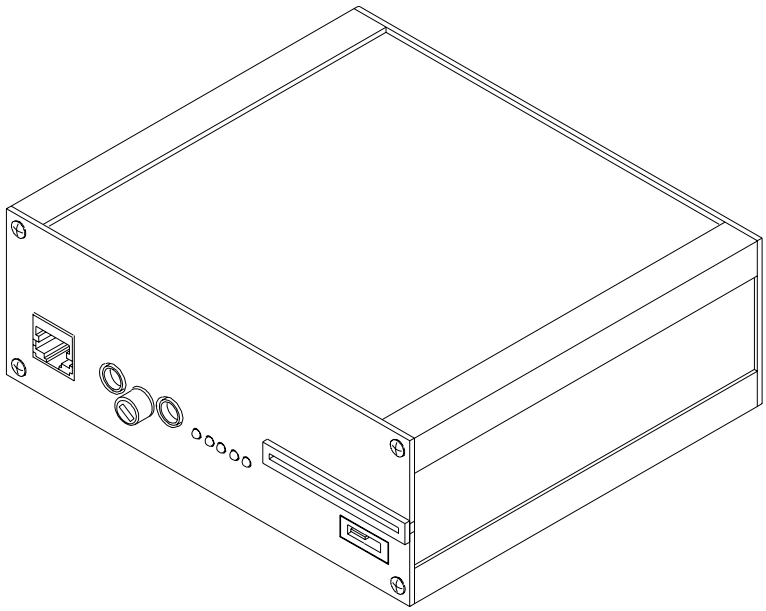
- FPS-8 Flash Prommer	0750123
- FPS-8 Activation Sheet	9359289
- Universal Power Supply	0680032
- AXS-4 Service Cable (D9-D9)	0730090
- Printer cable	0730029

Sales package code

FPS-8 Flash Prommer: 0080321

View of FPS-8

Figure 10: FPS-8



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SF12 SRAM module for FPS-8

FPS-8 flash prommer has to be equipped with 2 pcs of SF12 memory modules in order to update SW into NHL-2NA product.

Sales package code

SF12 SRAM module for FPS-8: 0080346

View of SF12

Picture of SF12 module is available in FPS-8 flash concept picture in NHL-2NA service manual.

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FPS-8C Parallel Flash Prommer (Sales Pack)

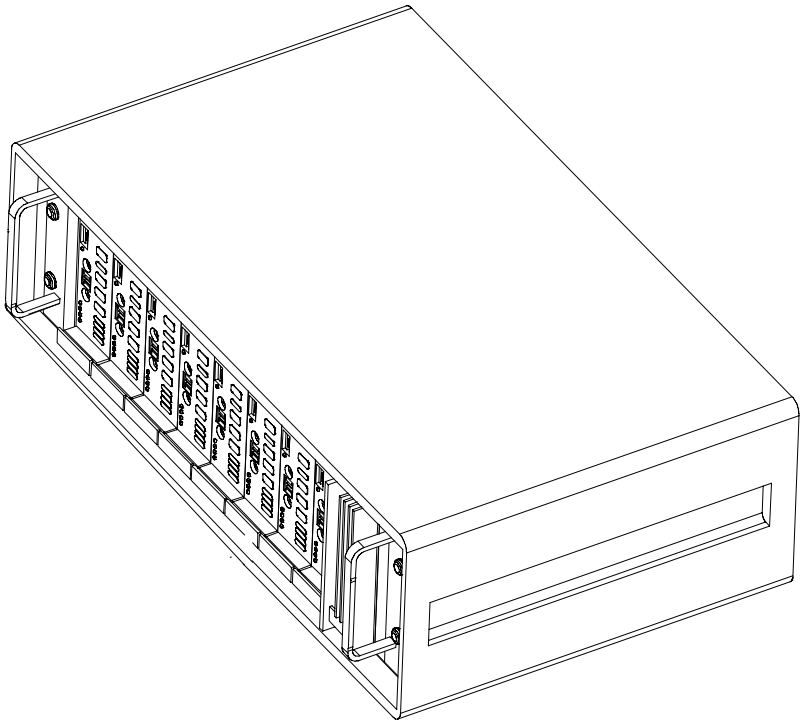
The Parallel Flash Prommer FPS-8C is used with MJF-7 and JBV-1. Flash programming can be done to maximum of 8 phones parallel. FPS-8C consists of eight SF11C programming cards. SF11C card is functionally identical to FPS-8.

Sales package code

FPS-8C Parallel Flash Prommer: 0080396

View of FPS-8C

Figure 11: FPS-8C



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ACF-8 Universal Power Supply

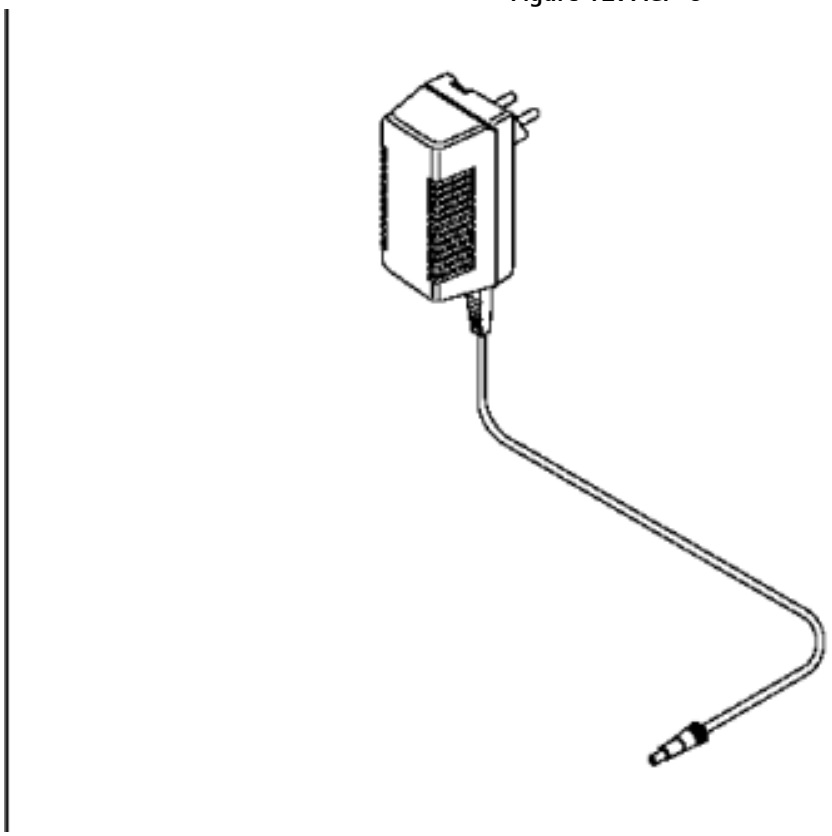
ACF-8 Universal Power Supply is used to power FPS-8. ACF-8 has 6 V DC and 2.1 A output.

Product Code

ACF-8 Universal Power Supply: 0680032

View of ACF-8

Figure 12: ACF-6



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FLA-21 POS (Point Of Sale) Flash Loading Adapter

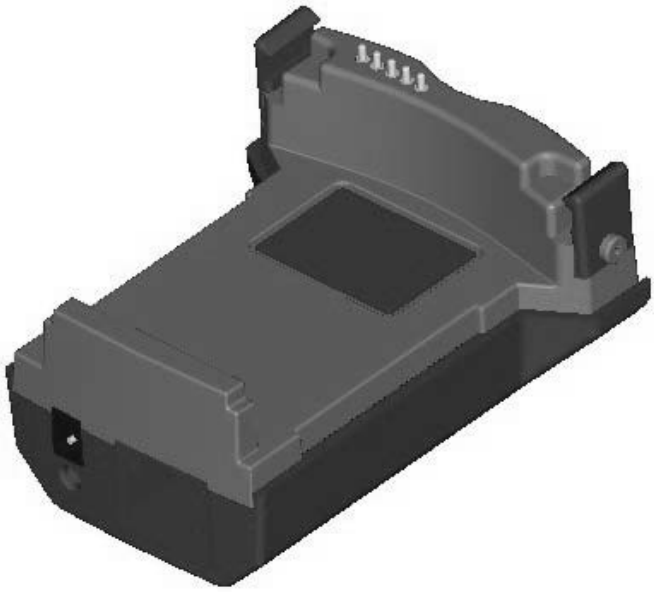
The POS Flash Loading Adapter FLA-21 is used in place of the phone's normal battery during service, to supply a controlled operating voltage and to connect to pads which are located between tranceiver and grip part. Note! Phone has to be opened into special service position with SRT-4 and SRT-5 tools in order to be able to used FLA-21 POS flash adapter.

Product Code

FLA-21 POS Flash Loading Adapter: 0775283

View of FLA-21

Figure 13: FLA-21



SRT-4 Opening tool (Upper part)

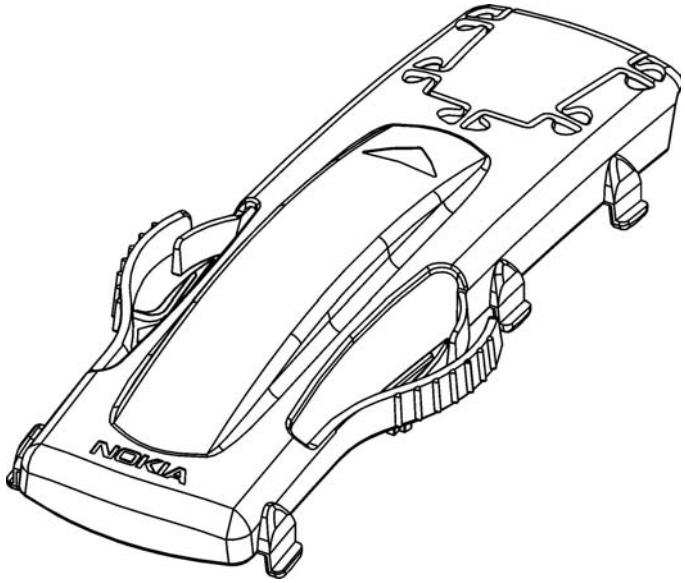
STR-4 opening tool is used together with SRT-5 tool to get NHL-2 tranceiver into position where FBUS and MBUS pads are visible. If end part of SRT-4 is cut away, it can also be used for complete disassembly of the phone.

Product Code

SRT-4 Opening tool (Upper part)0770286

View of SRT-4

Figure 14: SRT-4



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SRT-5 Opening Tool (Lower part)

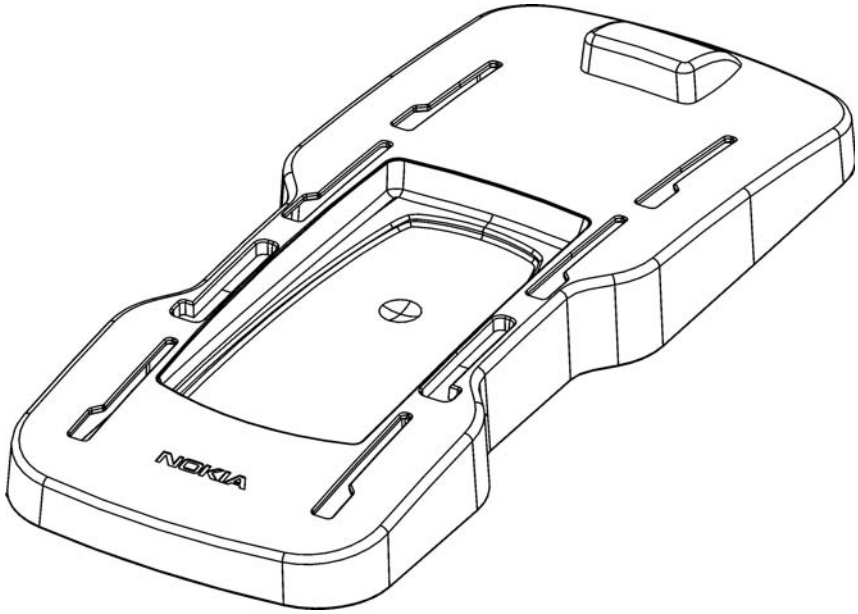
STR-5 opening tool is used together with SRT-4 tool to get NHL-2 tranceiver into position where FBUS and MBUS pads are visible.

Product Code

SRT-5 Opening tool (Lower part)0770444

View of SRT-5

Figure 15: SRT-5



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SRT-6 Opening Tool

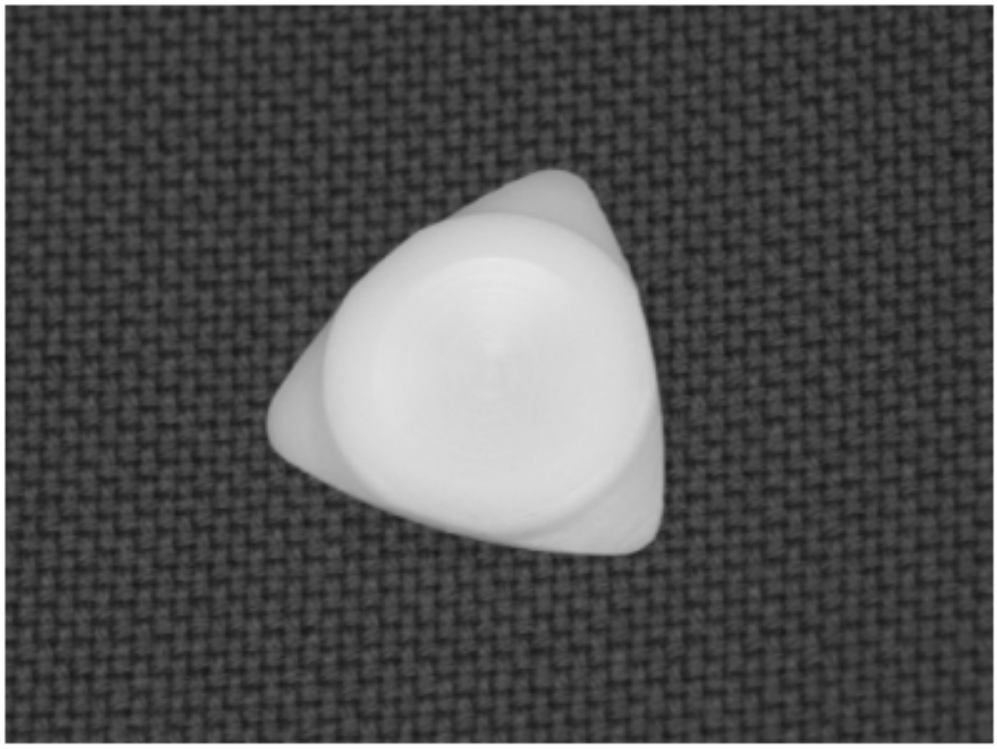
STR-6 opening tool is used to completely disassemble NHL-2NA product. It must be used to detach flex cable from grip part and to remove A-cover.

Product Code

SRT-6 Opening tool	0770431

View of SRT-6

Figure 16: SRT-6



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FLC-2 DC Cable

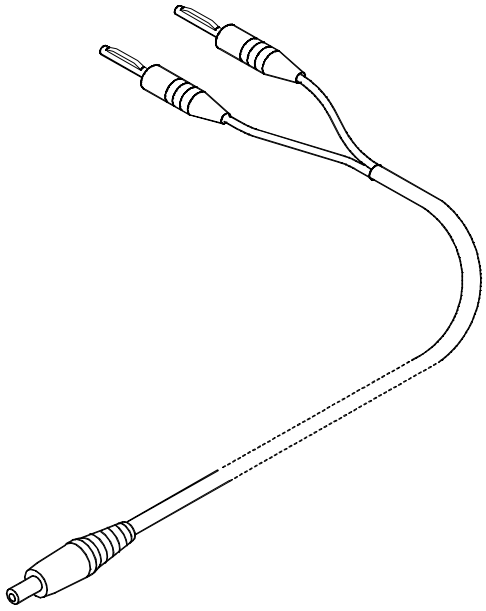
The FLC-2 is used to supply a controlled operating voltage to FLA-21 adapter.

Product Code

FLC-2 DC Cable:	0730185

View of FLC-2

Figure 17:



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AXS-4 Service Cable

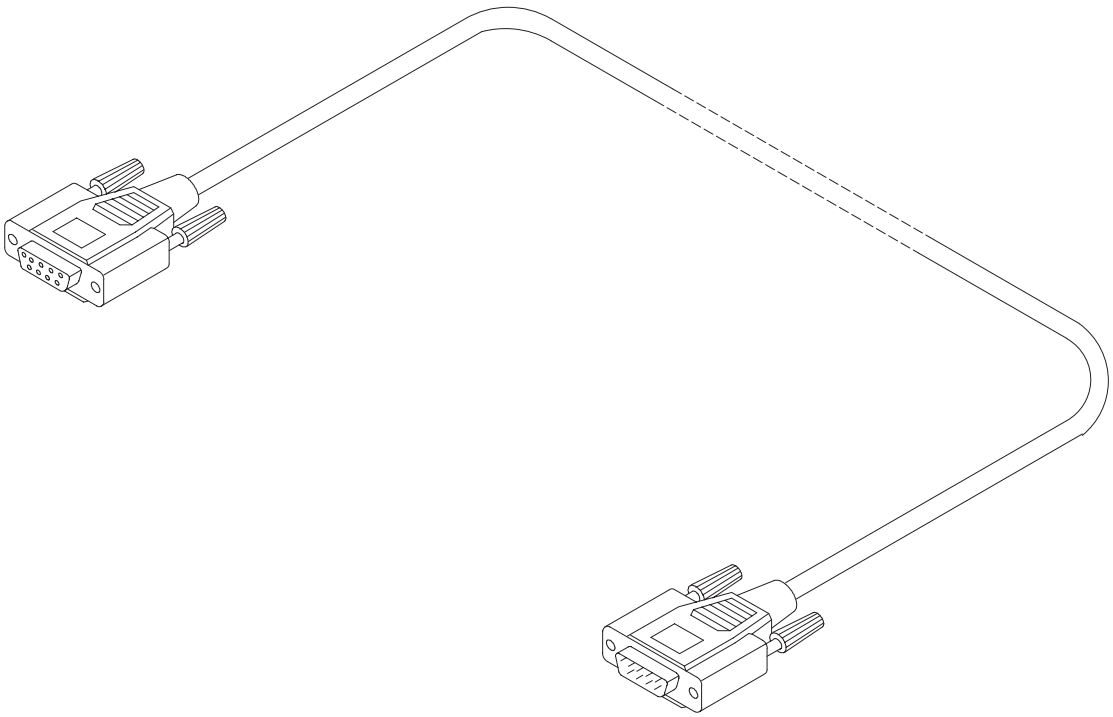
The AXS-4 D9-D9 Service Cable is used to connect two 9 pin D connectors e.g. between PC and FPS-8. Cable length is 2 meters.

Product code

AXS-4 D9-D9 Service Cable: 0730090

View of AXS-4

Figure 18: AXS-4



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XCS-1 Service Cable

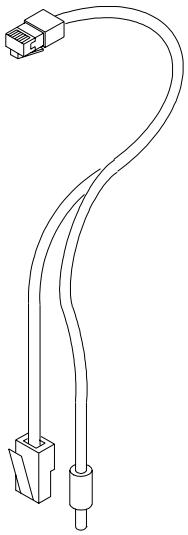
The XCS-1 Service Cable is used to connect FLS-4 to FLA-21.

Product code

XCS-1 Service Cable: 0730218

View of XCS-1

Figure 19: XCS-1



SW Security Device PKD-1

SW security device is a piece of hardware enabling the use of the service software when connected to the parallel (LPT) port of the PC. Whithout the dongle present it is not possible to use the service software. Printer or any such device can be connected to the PC through the dongle if needed.

Caution: Make sure that you have switched off the PC and the printer before making connections!

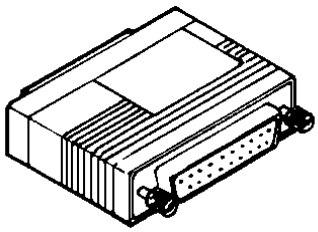
Caution: Do not connected the PKD-1 to the serial port. You may damage your PKD-1!

Product Code

SW Security Device PKD-1: 0750018

View of SW Security Device

Figure 20: PKD-1



G0750018

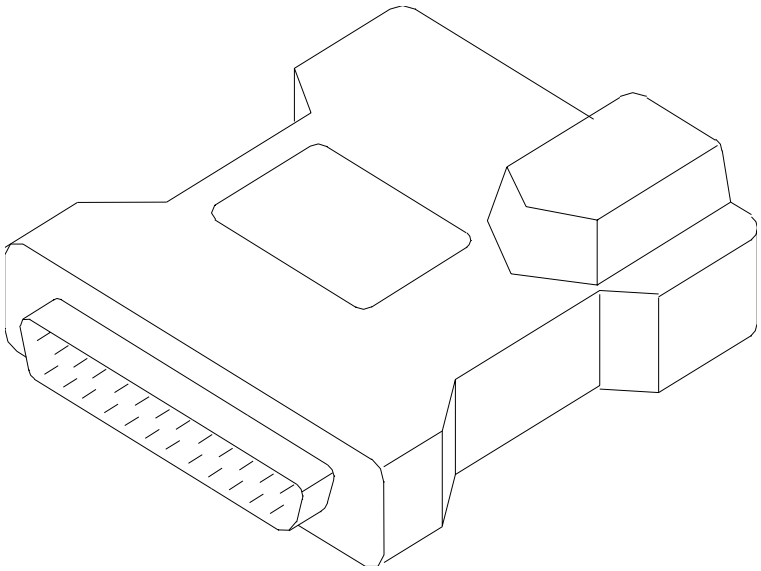
FLS-4S POS (Point Of Sale) Flash Device (Sales Pack)

FLS–4S is a dongle and flash device incorporated into one package, developed specifically for POS use.

Product Code

FLS-4S Sales Pack – Europe/Africa	0080541
FLS-4S Sales Pack –APAC	0080542
FLS-4S Sales Pack –Americas	0080543

View of FLS-4S



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PCS-1 Power Cable

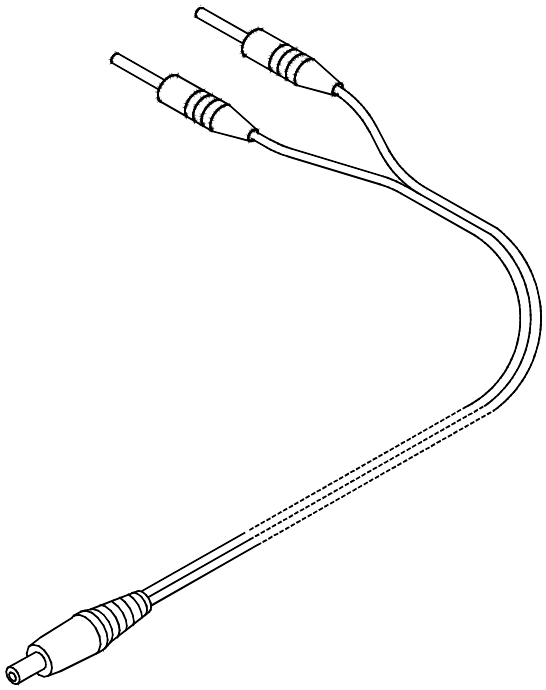
The PCS-1 Power Cable (DC) is used to connect e.g. JBV-1 or MJS-9Q to FPS-8.

Product Code

PCS-1 Power Cable: 0730012

View of PCS-1

Figure 21: PCS-1



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XRF-1 RF Cable

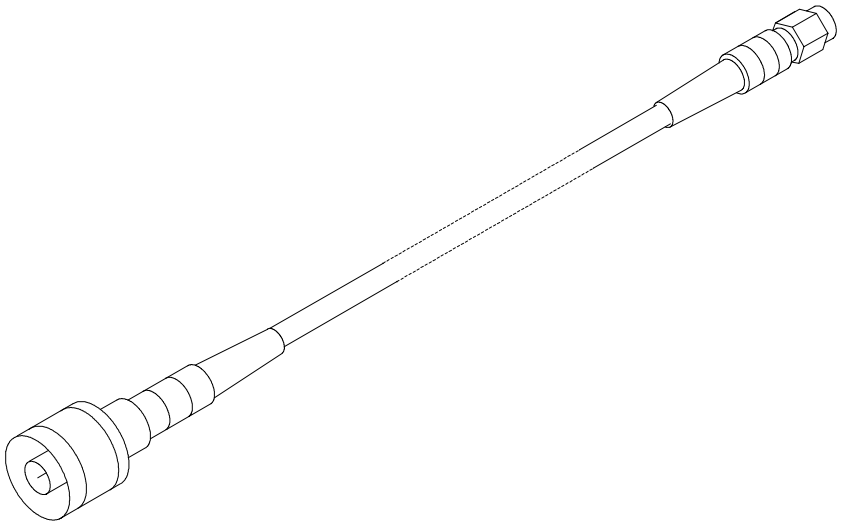
RF cable XRF-1 is used to connect e.g. MJS-9Q, CPL-5, TDS-10 or RA7 to RF measurement equipment..

Product code

XRF-1 RF Cable: 0730085

View of XRF-1

Figure 22: XRF-1



DAU-9S MBUS Cable

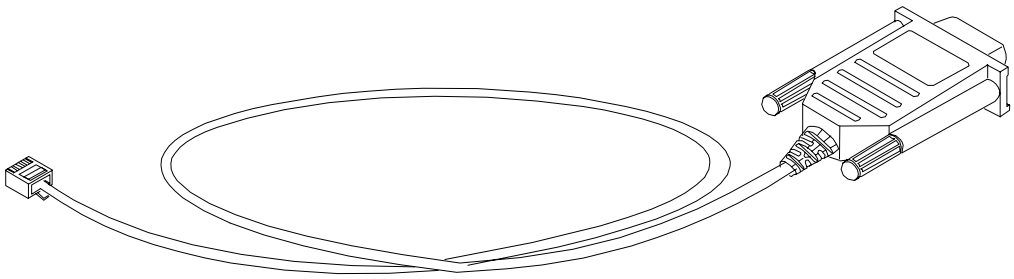
The MBUS Cable DAU-9S has a modular connector, and is used with between PC's serial port and e.g. MJS-9Q, FLA-21, or JBV-1

Product Code

DAU-9S MBUS Cable: 0730108

View of DAU-9S

Figure 23: DAU-9S



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SCB-3 DC Cable

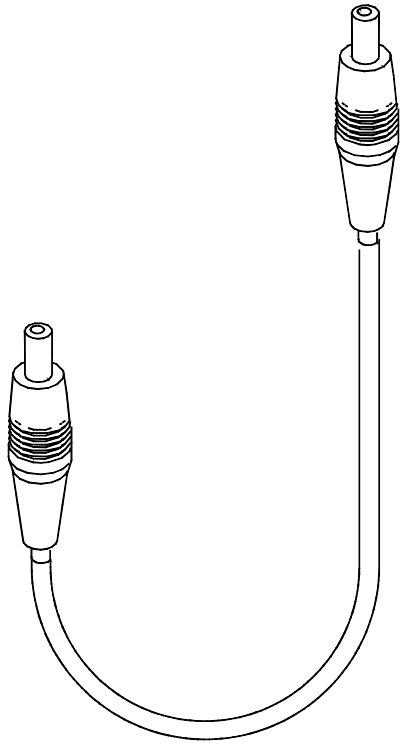
The DC Cable SCB-3 is used to connect e.g. JBV-1 to the phone.

Product Code

SCB-3 DC Cable: 0730114

View of SCB-3

Figure 24: SCB-3



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XCS-4 Modular Cable

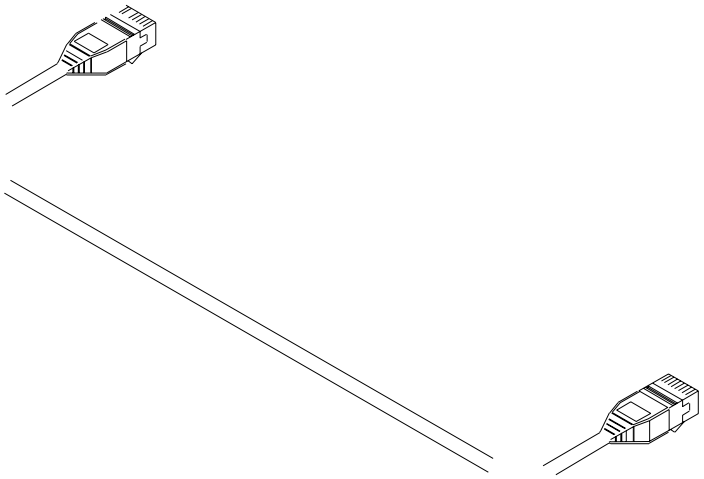
XCS-4 is a shielded cable (one specially shielded conductor) modular cable for flashing and service purposes.

Product code

XCS-4 Modular Cable: 0730178

View of XCS-4

Figure 25: XCS-4



Printer Cable

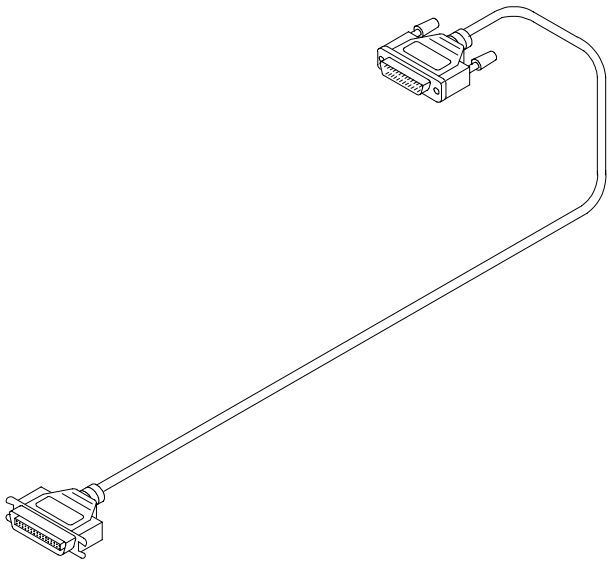
This cable is used to connect the PC to FPS-8.

Product code

Printer Cable: 0730029

View of Printer Cable

Figure 26:



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